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TOWNSEND AND TOWNSEND AND CREW, LLP
TWO EMBARCADERO CENTER
EIGHTH FLOOR
SAN FRANCISCO, CA 94111-3834

EXAMINER	
ODOM, CURTIS B	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/531,996	Applicant(s) MILLER ET AL.	
	Examiner Curtis B. Odom	Art Unit 2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-72* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-72* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 27 recites the limitation "the receiver" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 4-7, 9, 10, 14-17, 27, 28, 31-34, 36-38, and 42-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Fukasawa et al. (U. S. Patent No. 5, 533, 012).

Regarding claim 1, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

receiving (Fig. 1, block 200, column 25, lines 28-49) a data sequence to be transmitted, the data sequence comprising plural data symbols;

producing (Fig. 1, block 200, column 25, lines 43-49) a spread signal by modulating a first spreading code onto the data sequence; and

transmitting (Fig. 1, block 200, column 25, lines 43-49) the spread signal to a base station;

wherein the first spreading code spans a period of time which exceeds the time span of a data symbol (column 5, lines 33-37)

wherein the previous steps are performed in each transmitter among a plurality of transmitters (mobile stations), whereby the base station receives a transmitted spread signal from each of the transmitters (column 25, lines 28-49),

wherein the transmitting step is performed in each transmitter absent any synchronization with the other transmitters (column 1, lines 28-33 and column 2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signal are not synchronized.

Regarding claim 4, which inherits the limitations of claim 1, Fukasawa et al. discloses providing a second spreading code wherein some of the transmitters (mobile stations) use the first spreading code and others of the transmitters use the second spreading code (column 2, lines 19-27).

Regarding claim 5, which inherits the limitations of claim 1, Fukasawa et al. discloses for some of the transmitters a first spreading gain is used and for others of the transmitters a second spreading gain is used (column 2, lines 19-27 and column 3, line 25-column 4, line 30), wherein since the spreading gain depends on the spreading code, if different spreading codes are used, different spreading gains are also used pertaining to each spreading code.

Regarding claim 6, which inherits the limitations of claim 1, Fukasawa et al. discloses dividing the single communication channel (column 8, lines 45-57) into plural sub-channels and performing the steps of claim 1 for each sub-channel, wherein each carrier for each mobile station represents a sub-channel.

Regarding claim 7, which inherits the limitations of claim 1, Fukasawa et al. discloses for some of the transmitters the data sequence is received at a first data rate and for others of the transmitters the data sequence is received at a second data rate used (column 2, lines 19-27 and column 3, line 25-column 4, line 30), wherein since the allowable data rate depends on the spreading code, if different spreading codes are used, different data rates are also used pertaining to each spreading code.

Regarding claim 9, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

providing (Fig. 1, block 200, column 25, lines 28-49) a first spreading code to each transmitter among a plurality of transmitters (mobile stations);

receiving (Fig. 1, block 200, column 25, lines 43-49) a data sequence for transmission;

in each transmitter, generating (Fig. 1, block 200, column 25, lines 43-49) a spread signal by modulating the data sequence with the first spreading code and transmitting (column 14, lines 50-54, antenna) the spread signal over the single communication channel to a base station;

wherein the first spreading code spans a period of time which exceeds the time span of a data symbol (column 5, lines 33-37),

wherein each transmitter transmits its spread signal to the base station asynchronously with respect to the other transmitters (column 1, lines 28-33 and column 2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signals are not synchronized.

Regarding claim 10, which inherits the limitations of claim 9, Fukasawa et al. discloses the data sequences originate from different users (column 25, lines 43-49).

Regarding claims 14-16, the claimed method includes features corresponding to the above rejection of claims 4-6, which is applicable hereto.

Regarding claim 17, which inherits the limitations of claim 9, Fukasawa et al. discloses first transmitters receive first data sequences having a first data rate and second transmitters receive second data sequence having a second data rate (column 25, lines 28-42), wherein since the allowable data rate depends on the spreading code, if different spreading codes are used, different data rates are also used pertaining to each spreading code.

Regarding claim 27, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

receiving (Fig. 1, block 200, column 25, lines 28-49) a data sequence to be transmitted, the data sequence comprising plural data symbols;

producing (Fig. 1, block 200, column 25, lines 43-49) a spread signal by modulating a first spreading code onto the data sequence; and

transmitting (Fig. 1, block 200, column 25, lines 43-29) the spread signal to a base station;

wherein the first spreading code does not repeat during the step of modulating the data sequence (column 5, lines 33-37), wherein since the length of the spreading code is longer than the length of the data sequence, the spreading code does not have to repeat,

wherein the previous steps are performed in each transmitter among a plurality of transmitters (mobile stations), whereby the base station receives a transmitted spread signal from each of the transmitters (column 25, lines 28-49),

wherein the transmitting step is performed in each transmitter absent any synchronization with the other transmitters (column 1, lines 28-33 and column 2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signal are not synchronized.

Regarding claims 31-34, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 4-7 which is applicable hereto.

Regarding claim 36, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

providing (Fig. 1, block 200, column 25, lines 28-49) a first spreading code to each transmitter among a plurality of transmitters (mobile stations);

in each transmitter, receiving (Fig. 1, block 200, column 25, lines 43-49) plural data sequences for transmission;

in each transmitter, producing (Fig. 1, block 200, column 25, lines 43-49) plural spread signals by modulating the data sequence with the first spreading code, wherein the first spreading code does not repeat during the step of modulating (column 5, lines 33-37), wherein since the length of the spreading code is longer than the length of the data sequence, the spreading code does not have to repeat; and

in each transmitter, transmitting the spread signals over the single communication channel to a base station asynchronously with respect to the other transmitters (column 1, lines 28-33 and column 2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signal are not synchronized.

Regarding claim 37, which inherits the limitations of claim 36, Fukasawa et al. discloses the data sequences originate from different users (column 25, lines 43-49).

Regarding claim 38, which inherits the limitations of claim 36, Fukasawa et al. discloses each data sequence comrprises at most N bits and wherein the first spreading gain comprises at least N x g chips, where g is the processing gain (column 2, lines 19-27, column 3, line 25-column 4, line 30, column 5, lines 33-37).

Regarding claims 42-44, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 4-6, which is applicable hereto.

Regarding claim 45, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 17, which is applicable hereto.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims are 8, 18, 19, 22-26, 35, 46-48, 51-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al. (U. S. Patent No. 5, 533, 012).

Regarding claim 8, which inherits the limitations of claim 1, Fukasawa et al. does not disclose receiving transmissions from a base station that uses paired carrier multiple access signaling. However, Fukasawa et al. does disclose receiving transmissions from a base station which using multiple access signaling (column 25, lines 28-41). Therefore, it would have been obvious to one skilled in the art at the time the invention was made that the type of multiple access signaling used is deemed a design choice and does not constitute patentability.

Regarding claim 18, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

Regarding claim 19, Fukasawa et al. discloses discloses in a single communication channel, a multiple access method comprising steps of:

providing plural transmitters (Fig. 1, block 200, column 25, lines 43-49);

providing (column 25, lines 43-49) a first spreading code in each of the transmitters;

in each transmitter: receiving (column 25, lines 28-49) a data sequence, spreading the data sequence using the first spreading code to produce a spread signal, and transmitting the spread signal to a base station,

wherein the first spreading code spans a period of time which exceeds the time span of a data symbol (column 5, lines 33-37),

wherein each transmitter transmits its spread signal to the base station asynchronously with respect to the other transmitters (column 1, lines 28-33 and column

2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signals are not synchronized.

Fukasawa et al. does not disclose using an identical spreading code in each transmitter. However, it would have been obvious to one skilled in the art at the time the invention was made that this method could have been provided using an identical spreading codes in the same manner at which it is implemented using different spreading codes in each transmitter. The method would still allow for multiple access capability throughout the network/system which would reduce interference and multipath fading the in the network/system. Thus, using identical spreading codes is deemed a design choice and does not constitute patentability.

Regarding claim 22, which inherits the limitations of claim 19, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

providing (Fig. 1, block 200, column 25, lines 43-49) plural additional transmitters (mobile stations);

providing (Fig. 1, block 200, column 25, lines 43-49) a second spreading code (different spreading code for each transmitter) in each of the additional transmitters;

in each additional transmitter: receiving (column 25, lines 28-49) a data sequence, spreading the data sequence using the second spreading code to produce a spread signal, and transmitting the spread signal.

Fukasawa et al. does not disclose using an identical second spreading code in each transmitter. However, it would have been obvious to one skilled in the art at the time the invention was made that this method could have been provided using an identical

spreading codes in the same manner at which it is implemented using different spreading codes in each transmitter. The method would still allow for multiple access capability throughout the network/system which would reduce interference and multipath fading the in the network/system. Thus, using identical spreading codes is deemed a design choice and does not constitute patentability.

Regarding claims 23 and 24, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 4 and 17 which is applicable hereto.

Regarding claim 25, which inherits the limitations of claim 19, Fukasawa et al. discloses

dividing (column 8, lines 45-57) the single communication channel into at least two subchannels, wherein each carrier for each mobile station represents a sub-channel;

providing (Fig. 1, block 200, column 25, lines 43-49) plural additional transmitters (mobile stations);

providing (Fig. 1, block 200, column 25, lines 43-49) a second spreading code (different spreading code for each transmitter) in each of the additional transmitters;

in each additional transmitter: receiving (column 25, lines 28-49) a data sequence, spreading the data sequence using the second spreading code to produce a spread signal, and transmitting the spread signal over one of the subchannels.

Fukasawa et al. does not disclose using an identical second spreading code in each transmitter. However, it would have been obvious to one skilled in the art at the time the invention was made that this method could have been provided using an identical spreading codes in the same manner at which it is implemented using different spreading

codes in each transmitter. The method would still allow for multiple access capability throughout the network/system which would reduce interference and multipath fading the in the network/system. Thus, using identical spreading codes is deemed a design choice and does not constitute patentability.

Regarding claim 26, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

Regarding claim 35, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

Regarding claim 46, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

Regarding claim 47, Fukasawa et al. discloses in a single communication channel, a multiple access method comprising steps of:

providing plural transmitters (Fig. 1, block 200, column 25, lines 43-49);

providing (column 25, lines 43-49) a first spreading code in each of the transmitters;

in each transmitter: receiving (column 25, lines 28-49) a data sequence, spreading the data sequence using the first spreading code to produce a spread signal, wherein the spreading sequence does not repeat (column 5, lines 33-37) and transmitting the spread signal to a base station, whereby the base station receives a transmitted spread signal from each of the transmitters, wherein since the length of the spreading code is longer than the length of the data sequence, the spreading code does not have to repeat,

wherein each transmitter transmits its spread signal to the base station asynchronously with respect to the other transmitters (column 1, lines 28-33 and column

2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signals are not synchronized.

Fukasawa et al. does not disclose using an identical first spreading code in each transmitter. However, it would have been obvious to one skilled in the art at the time the invention was made that this method could have been provided using an identical spreading codes in the same manner at which it is implemented using different spreading codes in each transmitter. The method would still allow for multiple access capability throughout the network/system which would reduce interference and multipath fading the in the network/system. Thus, using identical spreading codes is deemed a design choice and does not constitute patentability.

Regarding claim 48, which inherits the limitations of claim 47, Fukasawa et al. discloses the first spreading code spans a period of time which exceeds the time span of the longest data sequence in any of the transmitters (column 5, lines 33-37).

Regarding claim 51, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 22 which is applicable hereto.

Regarding claims 52 and 53, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 4 and 17 which is applicable hereto.

Regarding claim 54, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 25 which is applicable hereto.

Regarding claim 55, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

7. Claims 2, 3, 11-13, 20, 21, 29, 30, 39-41, 49, and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al. (U.S. Patent No. 5, 533, 012) in view of Mahany (previously cited in Office Action 12/24/03).

Regarding claim 2, Fukasawa et al. discloses all the limitations of claim 2, (see rejection of claim 1) except the step of transmitting includes providing a preamble data sequence and modulating the preamble data sequence with a first preamble spreading code to produce a spread preamble signal.

However, Mahany discloses transmitting including providing a preamble data sequence and modulating the preamble data sequence with a first preamble spreading code to produce a spread preamble signal (column 9, lines 34-60). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the method of Fukasawa et al. with the preamble teachings of Mahany since the preamble would allow for adaptive equalization and maximum ratio combining at the receiver because these techniques generally benefit from training during the preamble period (Mahany, column 3, line 59-column 4, line 3).

Regarding claim 3, which inherit the limitations of claim 2, Fukasawa et al. does not disclose the step of transmitting includes providing a second preamble data sequence and modulating the second preamble data sequence with a second preamble spreading code to produce a spread preamble signal.

However, Mahany discloses transmitting including providing a second preamble data sequence (second preamble portion) and modulating the preamble data sequence with a second preamble spreading code to produce a spread preamble signal (column 9, lines 34-60). Therefore, it would have been obvious to one skilled in the art at the time

the invention was made to modify the method of Fukasawa et al. with the preamble teachings of Mahany since the preamble would allow for adaptive equalization and maximum ratio combining at the receiver because these techniques generally benefit from training during the preamble period (Mahany, column 3, line 59-column 4, line 3).

Regarding claims 11 and 12, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 2 and 3 which is applicable hereto.

Regarding claim 13, Fukasawa et al. and Mahany do not disclose repeating the first preamble spreading code one or more times. However, it would have been obvious to one skilled in the art that the first preamble spreading code would be repeated if the spreading code were shorter than a data symbol of the data sequence. The spreading code could also be repeated for future transmissions. Thus claim 13 does not constitute patentability.

Regarding claims 20 and 21, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 2 and 3 which is applicable hereto.

Regarding claims 29 and 30, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 2 and 3 which is applicable hereto

Regarding claims 39 and 40, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 2 and 3 which is applicable hereto

Regarding claims 41, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 13 which is applicable hereto.

Regarding claims 49 and 50, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 2 and 3 which is applicable hereto.

8. Claims 56, 57, 60-66, and 69-72 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al. (U.S. Patent No. 5, 966, 377) in view of Wildauer et al. (U.S. Patent No. 5, 903, 555).

Regarding claim 56, Fukasawa et al. discloses a system (Fig. 1, column 25, lines 28-49) for providing multiple access over a single communication channel comprising a plurality of transmitters (mobile stations) and a receiver (base station) to which each transmitter transmits, each transmitter comprising:

an input (Fig. 2, block 200, antenna, column 25, lines 43-49)) component configured to receive plural data sequences;

a memory store (Fig. 1, block 213) configured to contain a first spreading code, wherein the first spreading code comprises more than g chips, where g is the processing gain (column 2, lines 19-27, column 3, line 25-column 4, line 30, column 5, lines 33-37);

a processing component (Fig. 1, block 213, column 25, lines 43-49) configured to modulate the data sequence with the first spreading code to produce a spread signal, wherein the first spreading code comprises more than g chips, where g is the processing gain (column 2, lines 19-27, column 3, line 25-column 4, line 30, column 5, lines 33-37); and

a transmission component (Fig. 1, block 206, antenna) configured to transmit the spread signal, wherein the spread signal is transmitted in asynchronous manner relative to the other transmitters (column 1, lines 28-33 and column 2, lines 34-47), wherein the interference caused by the asynchronous transmission in cancelled, but the signals are not synchronized.

However, Fukasawa et al. does not disclose transmitting the spread signal as a burst.

Wildauer et al. discloses a system for providing multiple access over a single communication channel transmitting spread signals as bursts (column 2, lines 34-43).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Fukasawa et al. with the teachings of Wildauer since transmitting signals as bursts as taught by Wildauer et al. is well known in the art and deemed a design choice which does not constitute patentability.

Regarding claim 57, which inherits the limitations of claim 56, Fukasawa et al. discloses the data sequences each comprise at most N bits and the first spreading code comprises more than N x g chips (column 5, lines 33-37), wherein the spreading code is longer than the data sequence.

Regarding claim 60, which inherits the limitations of claim 56, Fukasawa et al. discloses modulating data sequences with either a first or a second spreading code (column 1, lines 29-33), wherein a different spreading code is provided for each mobile station. Fukasawa et al. does not disclose a memory store configured to contain a first and second spreading code.

Wildauer et al. discloses a system for providing multiple access over a single communication channel comprising a memory store (column 7, lines 12-18, code book) configured to contain a first and second spreading code. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Fukasawa et al. with the teachings of Wildauer since allwing the spreading code memory to contain multiple spreading codes would allow immediate access to multiple users/channels which would increase the rate processing spread spectrum signals in the device.

Regarding claim 61, the claimed device includes features corresponding to subject matter mentioned in the above rejection of claim 48 which is applicable hereto.

Regarding claims 62 and 63, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claims 15 and 17 which is applicable hereto.

Regarding claim 64, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

Regarding claim 65, Fukasawa et al. discloses a system for providing multiple access over a single communication channel, comprising:

a base station (Fig. 1, block 100, column 25, lines 28-49); and

plural transmitters (Fig. 1, block 200, column 25, lines 28-49), each configured to transmit data to the base station in an asynchronous manner,

each transmitter configured to:

receive (column 25, lines 28-49) a data sequence of at most N bits in length;

contain (Fig. 1, block 213, column 25, lines 28-49) a spreading code, the spreading code comprising more that g chips, where g is the processing gain (column 2, lines 19-27, column 3, line 25-column 4, line 30, column 5, lines 33-37);

modulate (column 25, lines 28-49) the data sequence with the spreading code to produce a spread signal; and,

transmit (column 14, lines 50-54, antenna) the spread signal.

However, Fukasawa et al. does not disclose transmitting the spread signal as a burst.

Wildauer et al. discloses a system for providing multiple access over a single communication channel transmitting spread signals as bursts (column 2, lines 34-43).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the method of Fukasawa et al. with the teachings of Wildauer since transmitting signals as bursts as taught by Wildauer et al. is well known in the art and deemed a design choice which does not constitute patentability.

Regarding claim 66, which inherits the limitations of claim 65, Fukasawa et al. discloses the spreading code comprises more that N x g chips (column 2, lines 19-27, column 3, line 25-column 4, line 30, column 5, lines 33-37).

Regarding claim 69, which inherits the limitations of claim 65, the claimed system includes features corresponding to subject matter mentioned in the above rejection of claim 7 which is applicable hereto.

Regarding claim 70, which inherits the limitations of claim 69, Fukasawa et al. discloses the transmitters and base stations (Figs. 1-18) are not configured to perform chip alignment or bit alignment.

Regarding claim 71, which inherits the limitations of claim 65, Fukasawa et al. discloses the base station is not configured with a multi-user detection component (Fig. 2B.)

Regarding claim 72, the claimed method includes features corresponding to subject matter mentioned in the above rejection of claim 8.

9. Claims 58, 59, 67 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukasawa et al. (U.S. Patent No. 5, 966, 377) in view of Wildauer et al. (U.S. Patent No. 5, 903, 555) and in further view of Mahany (previously cited in Office Action 12/24/03).

Regarding claim 58, which inherits the limitations of claim 56, Fukasawa et al. and Wildauer et al. et al. disclose all the limitation of claim 58 (see previous rejection of claim 56) except for the memory containing a preamble and a preamble spreading code and the processing component is further configured to modulate the data preamble with the preamble spreading code.

However, Mahany discloses transmitting including providing a preamble data sequence and modulating the preamble data sequence with a first preamble spreading code to produce a spread preamble signal (column 9, lines 34-60). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the device of Fukasawa et al. and Wildauer et al. et al. with the preamble teachings of Mahany and contain a preamble and preamble spreading code in memory since the preamble would allow for adaptive equalization and maximum ratio combining at the receiver because these techniques generally benefit from training during the preamble period (Mahany, column 3, line 59-column 4, line 3).

Regarding claim 59, which inherits the limitation of claim 58, Fukasawa et al., Wildauer et al. et al., and Mahany do not disclose modulating the data preamble sequence with the preamble spreading code by repeating the preamble spreading code one or more times. However, it would have been obvious to one skilled in the art that the preamble spreading code would be repeated if the spreading code were shorter than a data symbol of the data sequence. The spreading code could also be repeated for future transmissions. Thus claim 13 does not constitute patentability.

Regarding claims 67 and 68, the claimed device includes features corresponding to subject matter mentioned in the above rejection of claims 58 and 59 which is applicable hereto

Conclusion

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the

advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 703-305-4097. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Curtis Odom
July 9, 2004

STEPHEN CHIN
SUPERVISORY PATENT EXAMINE
TECHNOLOGY CENTER 2600